CLAIMS

What is claimed is:

1 A method for allowing a user to define and use custom metadata, the method comprising the steps of:

(a) providing a network accessible server with a metadata library comprising a plurality of metadata vocabularies;

(b) displaying from the server a user interface on a client computer that allows the user to specify a plurality of properties to thereby create a custom metadata vocabulary; and

(c) storing the custom metadata vocabulary in the metadata library.

2 The method of claim 1 further including the step of:

(d) allowing the user to search the metadata library to select at least one of the metadata vocabularies to apply to an electronic resource.

3 The method of claim 1 wherein step (a) further includes the step of:

(i) providing the server with management capabilities that allows a user to create metadata vocabularies, add references to the library to metadata vocabularies existing external to the metadata library, and set user permissions for the metadata vocabularies in the library.

4 The method of claim 3 wherein step (a) (i) further includes the step of: adding references to external metadata vocabularies by providing a universal resource indicator and name of the metadata vocabulary.

5 The method of claim 1 wherein step (b) further includes the step of:

(i) allowing the user to specify constraints on the values the properties may have.

6 The method of claim 5 wherein step (b) further includes the step of displaying a form-driven interface that includes fields for the user to enter property names and constraint values.

7 The method of claim 1 wherein step (b) further includes the step of:

(i) allowing the user to create the custom metadata vocabulary by reusing an existing metadata vocabulary.

8 The method of claim 7 wherein step (b)(i) further includes the step of:

(1) allowing the user to search for the existing metadata vocabulary by entering search criteria that include vocabulary names and property names;

(2) displaying metadata vocabularies matching the search criteria; and

(3) allowing the user to select properties from the displayed metadata vocabularies to add to the custom metadata vocabulary.

9 The method of claim 1 further including the step of:

allowing the user to supply a software validator to enforce constraints beyond those supported by an underlying specification language, wherein the software validator is called when metadata associated with the vocabulary is created or changed, but after constraints enforced by the specification language have been verified.

10 The method of claim 2 wherein step (d) further includes the step of:

allowing the user to upload the resource to the server.

11 The method of claim 2 wherein step (d) further includes the step of:

allowing the user to specify which metadata vocabularies are required to be associated with particular resource types.

12 The method of claim 11 wherein step (d) further includes the step of:

(i) associating user account information with the resource type and required metadata vocabulary information; and

(ii) automatically applying required metadata vocabularies specified for the type of electronic resource when the server receives the resource by checking the user's account and retrieving the required metadata vocabularies specified for the resource type.

13 The method of claim 10 wherein step (a) further includes the step of: including in the vocabulary library a universal schema, shared schemas, and private schemas.

14 The method of claim 13 wherein step (a) further includes the step of: requiring all images in the network to include metadata that is specified by the universal schema.

15 The method of claim 2 further including the steps of allowing the user to assign a metadata instance to the resource by:

retrieving required metadata vocabularies specified for a resource type of the resource;

merging the retrieve metadata vocabularies and removing duplicate properties;

generating and displaying forms that allow the user to enter data values for the properties;

validating the data values based on vocabulary constraints; and

associating the data values with the resource and saving.

16 A computer-readable medium containing program instructions for allowing a user to define and use custom metadata, the instructions for:

(a) providing a network accessible server with a metadata library comprising a plurality of metadata vocabularies;

(b) displaying from the server a user interface on a client computer that allows the user to specify a plurality of properties to thereby create a custom metadata vocabulary; and

(c) storing the custom metadata vocabulary in the metadata library.

17 The method of claim 16 further including the step of:

(d) allowing the user to search the metadata library to select at least one of the metadata vocabularies to apply to an electronic resource.

18 The computer-readable medium of claim 16 wherein instruction (a) further includes the instruction of:

(i) providing the server with management capabilities that allows a user to create metadata vocabularies, add references to the library to metadata vocabularies existing external to the metadata library, and set user permissions for the metadata vocabularies in the library.

19 The computer-readable medium of claim 18 wherein instruction (a) (i) further includes the instruction of: adding references to external metadata vocabularies by providing a universal resource indicator and name of the metadata vocabulary.

20 The computer-readable medium of claim 16 wherein instruction (b) further includes the instruction of:

(i) allowing the user to specify constraints on the values the properties may have.

21 The computer-readable medium of claim 20 wherein instruction (b) further includes the instruction of displaying a form-driven interface that includes fields for the user to enter property names and constraint values.

22 The computer-readable medium of claim 16 wherein instruction (b) further includes the instruction of:

(i) allowing the user to create the custom metadata vocabulary by reusing an existing metadata vocabulary.

23 The computer-readable medium of claim 22 wherein instruction (b)(i) further includes the instruction of:

(1) allowing the user to search for the existing metadata vocabulary by entering search criteria that include vocabulary names and property names;

(2) displaying metadata vocabularies matching the search criteria; and

(3) allowing the user to select properties from the displayed metadata vocabularies to add to the custom metadata vocabulary.

24 The computer-readable medium of claim 17 further including the instruction of:

allowing the user to supply a software validator to enforce constraints beyond those supported by an underlying specification language, wherein the software validator is called when metadata associated with the vocabulary is created or changed, but after constraints enforced by the specification language have been verified.

25 The computer-readable medium of claim 17 wherein instruction (d) further includes the instruction of: allowing the user to upload the resource to the server.

26 The computer-readable medium of claim 17 wherein instruction (d) further includes the instruction of: allowing the user to specify which metadata vocabularies are required to be associated with particular resource types.

27 The computer-readable medium of claim 26 wherein instruction (d) further includes the instruction of:

(i) associating user account information with the resource type and required metadata vocabulary information; and

(ii) automatically applying required metadata vocabularies specified for the type of electronic resource when the server receives the resource by checking the user's account and retrieving the required metadata vocabularies specified for the resource type.

28 The computer-readable medium of claim 27 wherein instruction (a) further includes the instruction of: including in the vocabulary library a universal schema, shared schemas, and private schemas.

29 The computer-readable medium of claim 28 wherein instruction (a) further includes the instruction of: requiring all images in the network to include metadata that is specified by the universal schema.

30 The computer-readable medium of claim 17 further including the instructions of allowing the user to assign a metadata instance to the resource by:

retrieving required metadata vocabularies specified for a resource type of the resource;

merging the retrieve metadata vocabularies and removing duplicate properties;

generating and displaying forms that allow the user to enter data values for the properties;

validating the data values based on vocabulary constraints; and

associating the data values with the resource and saving.

31 A metadata management system, comprising:

a plurality of client computers, wherein each client computer stores respective resources; and

a server in communication with the client computers over a network, the server including

a metadata vocabulary library containing a plurality of metadata vocabularies, each metadata vocabulary comprising a plurality of properties and constraints on values the properties may have, and

a Web application for displaying browser-based forms on the client computers that allow users of the client computers to define

custom metadata vocabularies for storage in the metadata vocabulary library by entering property names,

32 The system of claim 31 wherein the Web application further functions to allow the user to search the metadata library to select at least one of the metadata vocabularies to apply to the resources, such a wherein the user uploads one of the resources to the server, the selected metadata vocabularies are applied to the resource.

33 The system of claim 31 wherein the server includes management capabilities that allows a user to create metadata vocabularies, add references to the library to metadata vocabularies existing external to the metadata library, and set user permissions for the metadata vocabularies in the library.

34 The system of claim 33 wherein the user adds references to external metadata vocabularies by providing a universal resource indicator and name of the metadata vocabulary.

35 The system of claim 31 wherein the Web application includes a form-driven interface that includes fields for the user to enter property names and constraint values.

36 The system of claim 31 wherein Web application allows the user to create the custom metadata vocabulary by reusing an existing metadata vocabulary.

37 The system of claim 36 wherein an existing metadata vocabulary is reused by:

allowing the user to search for the existing metadata vocabulary by entering search criteria that include vocabulary names and property names,

displaying metadata vocabularies matching the search criteria, and

allowing the user to select properties from the displayed metadata vocabularies to add to the custom metadata vocabulary.

38 The system of claim 32 further including a software validator running on client appears to enforce constraints beyond those supported by an underlying specification language, wherein the software validator is called when metadata associated with the vocabulary is created or changed, but after constraints enforced by the specification language have been verified.

39 The system of claim 32 wherein the user is allowed to specify which metadata vocabularies are required to be associated with particular resource types.

40 The system of claim 39 wherein the Web application associates user account information with the resource type and required metadata vocabulary

information, and to the required metadata vocabularies specified for the type of electronic resource are automatically applied when the server receives the resource by checking the user's account and retrieving the required metadata vocabularies specified for the resource type.

41 The system of claim 40 wherein the metadata vocabulary library includes a universal schema, shared schemas, and private schemas.

42 The system of claim 41 wherein requiring all resources stored on the server are required to include metadata that is specified by the universal schema.

43 The system of claim 32 wherein the user is allowed to assign a metadata instance to the resource by:

retrieving required metadata vocabularies specified for a resource type of the resource;

merging the retrieve metadata vocabularies and removing duplicate properties;

generating and displaying forms that allow the user to enter data values for the properties;

validating the data values based on vocabulary constraints; and

associating the validated data values with the resource and saving.